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EXAMINER
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BOEHLER, ANNE MARIE M

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3611

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PAPER

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/567,597  
Filing Date: February 03, 2006  
Appellant(s): ROSENFELD ET AL.

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Robert W. Becker  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed December 01, 2008 appealing from the Office action mailed March 12, 2008.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

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**(8) Evidence Relied Upon**

No evidence is relied upon by the examiner in the rejection of the claims under appeal.

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

- 1. Claims 14, 18-20 and 22-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Rosell (USPN 4,629,026).**

Rosell shows a steering mechanism with a rack 30 meshing with a pinion 20 and a hydraulic servo-drive. The servo includes a rod 14, a piston 16 and a cylinder 50. The rack is fixed to the cylinder body in the axial direction such that the rack and piston rod are parallel and spaced from each other. Center take-off tie rods 61 are mounted to a central portion of the cylinder at 63. A rotary valve body 40 is connected to the pinion, as is conventional.

- 2. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rosell in view of Ozeki (USPN 6,039,334).**

Rosell lacks an added guide rod.

Ozeki teaches the use of an added guide rod 36 in order to reduce noise in the mechanism (as discussed in col. 1, lines 54-59, of Ozeki).

It would have been obvious to one of ordinary skill in the art to provide the Rosell mechanism with an additional guide rod, as taught by Ozeki, in order to reduce noise in the system.

- 3. Claims 17 and 26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.**

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The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

It is not clear if applicant means for claim 17 to be canceled or not. Claim 17 is labeled "canceled" but it is the only canceled claim that also has all of the text of the claim provided. For the purpose of this office action, it is assumed claim 17 is pending, but clarification is required. In claim 17, applicant recites a rotary slide valve carried by the cylinder. However, claim 17 depends from claim 14 which recites a rack fixed to the cylinder in the axial direction. In the embodiment of claim 14, the valve cannot be mounted to the cylinder because the cylinder moves. Applicant has not disclosed any embodiment where the valve moves with the cylinder. It appears that in every embodiment the valve is mounted to steering housing 1 to rotate about a fixed axis. Figure 4 shows the rotary valve 30, 33, is fixed to the pinion 13, which has a fixed axis and does not move axially with the cylinder 42.

Similarly, in claim 26, applicant recites tie rods articulated to end faces of the rod. However, the embodiment currently being claimed has a movable cylinder and fixed piston rod. It would be impossible for this embodiment to operate as a steering system if the tie rods were fixed to the piston rod.

**(10) Response to Argument**

**1. Rosell anticipates claims 14, 18-20, and 22-24.**

Applicant states that Rosell (USPN 4,629,026), does not disclose or suggest a rack that is fixed in the axial direction to the cylinder, as recited in claim 14. The examiner disagrees. Rosell teaches a steering mechanism with a housing 10, a rack 30, and a hydraulic servo-drive having a piston/cylinder unit. The piston/cylinder unit includes a fixed piston 16 and fixed piston rod 14. A cylinder 50 moves axially with respect to the piston and piston rod and is fixed in the axial direction to the rack 30. Ends of the rack are pressed against arches 52 using pins 54. The arches are firmly fixed to the cylinder 50 (see col. 1, lines 51-53, and col. 2, lines 47-48). The arches do not move relative to the cylinder in any direction. Elastic components 34 are positioned between the rack 30 and cylinder 50 for some radial movement of the rack relative to the cylinder, but no axial movement. The rack is fixed axially to the cylinder not only by pins the 54, but also by abutting walls on the rack and arches, respectively. As seen in Figure 1, the arches 52 extend axially along the outer surface of the cylinder. They have axially outer ends and inner ends. These inner ends are not numbered but they are clearly shown in Figure 1 (34 is the numeral in closest proximity to this structure). The inner end of each arch 52 (the end closer to the center of the rack) forms a radial wall. The lower side of the rack has notches cut out toward each end. The notched ends each have a longitudinally extending wall that extends along to top surface of each arch and a radial wall that abuts the radial wall of the respective arch. This structure, in conjunction with the firmly

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pinned distal ends of the rack, prevents any longitudinal movement of the rack relative to the cylinder.

Appellant argues that the drawings of Rosell show the rack is movable in an axial direction. Appellant indicates that the tapered ends of the rack are pinned by cross members 54 so as to allow the rack to move axially under the pins. However, appellant's interpretation is contrary to the text of Rosell and is not consistent with the Rosell drawings. Rosell clearly describes the ends of rack as being "immobilized" by the cross members 54 (col. 2, lines 52-53). It describes specific movement of the rack relative to the cylinder. This floating movement is in the radial or transverse direction (col. 3, line 15) and possibly about the axis of the piston or an axis parallel to it (see col. 2, lines 40-43 and col. 3, lines 21-22), not in the axial direction. The relative movement is permitted due to the radial spacing between the outer wall of the cylinder 50 and the rack and elastic components that are positioned there between. Axial movement is prevented, as discussed above, by the pin or cross members 54 and the abutting walls.

Applicant argues that there are, at least, contradictions between the text and drawings of Rosell that would lead a reader to conclude that the rack is axially movable relative to the cylinder. There is no contradiction between the text and drawings of Rosell. As indicated above, Rosell teaches a rack having ends that are securely pinned to the cylinder. This connection prevents axial movement while allowing radial and some twisting movement. Rosell teaches that this structure allows for a simplified rack structure that does not require very

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accurate machining to be used (col. 1, lines 41-42) because of the relative radial and twisting movement that is built into the design. No looseness in the axial direction is taught and such movement would interfere with the operation of the device. The system requires accurate transmission of axial movement between the rack and the cylinder for satisfactory steering of the wheels.

Appellant notes, on page 6, lines 14-16, that the pinion is mounted centrally in the device which, he states, is inconvenient. However, it is not clear how this comment is relevant to the claimed invention. A sideways offset location of the pinion is not claimed. Also, a number of applicant's own embodiments show the pinion 13 positioned centrally in the device.

On page 6, lines 6-10, Appellant makes reference to the "original Spanish application or another parallel document", apparently meaning the foreign priority document of Rosell. However, no such document is relied upon by the examiner or is even made of record in the present application. Also, the translation of such a document that applicant refers to is not of record. Therefore, it is not clear on what Appellant is relying. The examiner maintains that the disclosure of Rosell is clear and consistent and does not require other supporting documentation.

**2. Claim 25 is obvious over the combination of Rosell and Ozeki.**

Appellant has not separately argued the rejection of claim 25.

**3. Claims 17 and 26 are properly rejected under 35 USC 112, second paragraph, for failing to comply with the written description requirement.**

Appellant has not separately argued the rejection based on first paragraph 112, and has indicated the intention to cancel claims 17 and 26.



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**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Anne Marie Boehler

/Anne Marie M Boehler/

Primary Examiner, Art Unit 3611

Conferees:

Kevin Hurley /KH/

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